

**AMSAFE AVIATION INFLATABLE AND STANDARD RESTRAINT
SYSTEMS**

POST INCIDENT TEST REPORT

For

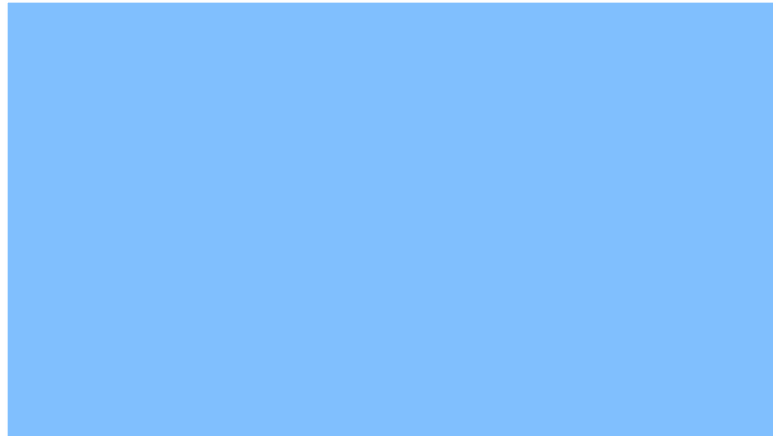
AVIAT HUSKY AIRCRAFT TAIL NUMBER N94HY

Prepared for:

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Revision History

Rev	By	Approved	Date	Revision Summary
NC	BH	BH	14 DEC 06	Initial issue:

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1.0 APPLICABLE DOCUMENTS

The following reference documents, at their latest revision, form a part of this document to the extent specified herein.

AmSafe Documents

AmSafe Drawing No. 508358
AmSafe Work Instr. WI-I-299-7
Amsafe Specification E508645
Test Plan TP508588
Test Report TR508589
Operation Procedure OP-670

Electronic Module Assembly Dual/Single Sensor
Electronic Module Assembly
Product Specification for Shock Sensor Element
Aviat Occupant Safety Test Plan
Aviat Occupant Safety Test Report
Control of Inspection, Measuring and Test Equipment

2.0 INTRODUCTION

This test report describes the testing methodology and results required to qualify the AAIR Electronics Module Assembly (EMA) for installation into Part 23 aircraft. The tests outlined in this document demonstrate the compliance of the EMA as required per the production drawings and work instructions as listed in the Applicable Documents.

2.1 PURPOSE

The purpose of conducting this post incident investigation is to verify that the EMA, part number 508358-409, serial number 17MAY05-42, installed on the Aviat Husky aircraft, tail number N94HY, as a part of the completed inflatable restraint system was manufactured in accordance to production requirements and functioned properly at the time of the incident.

2.2 TEST DISPOSITION

Testing was performed at the AmSafe manufacturing facilities, Phoenix, AZ on October 25, 2006. Testing was witnessed by Judy Baty, FAA Manufacturing Inspection representative. The AmSafe points of contact are Doris Tilton, Quality Manager, Jim Crupi, Customer Support Manager and Brad Howard, Manufacturing Engineer.

The tests required to accept an EMA is in two parts. The first test inspects the circuitry of the assembly. The test determines the output voltage and open circuits as required by the system to perform correctly. The second test inspects the trigger timing, also known as the "time to fire". The test ensures that the unit will send a signal to the system when subjected to a 21g/60ms or 26g/50ms crash pulse as defined in production drawing 508358 and the sensor specification E508645

At the conclusion of the tests, as mentioned in the above paragraph, no anomalies were found and the unit performed as designed.

3.0 SUMMARY OF TESTING

EMA Part Number: 508358-409
EMA Serial Number: 17MAY05-42
Date of manufacture: M0505

Reference Document	Test Sequence	Test Requirement Description	Actual	Pass/Fail
508358	Note 1.a	Verify voltage output is greater than 7.0 volts across pins A & B.	7.36 VDC	Pass
508358	Note 1.b	Verify open circuit across pins B & C.	Open	Pass
508358	Note 1.c	Verify open circuit across pins B & D	Open	Pass
508358	Note 4	Module Trigger time when subjected to a 14.54g/43ms sawtooth pulse. Trigger timing is 37 +/- 2 ms.	37.6 ms	Pass
508358	Note 5	Module Trigger time when subjected to a 17.5g/35 ms sawtooth pulse. Trigger timing is 29 +/- 2 ms.	29.2 ms	Pass

4.0 TEST AND MEASURING EQUIPMENT

All tests were performed using instrumentation and measuring equipment that are calibrated per AmSafe Operating Procedure OP-670, Control of Inspection, Measuring and Test Equipment.

Description	Manufacturer	Model No.	Serial No.	Calibration Due Date	AmSafe ID No.
Multimeter	Fluke	73 III	N/A	14Jan07	CE041
Digital Signal Processor	Unholtz Dickie	DSP-4	00567508	20Jun07	CE099
	Unholtz Dickie	VGN-4	1513	20Jun07	CE100
Digital Signal Processor	Unholtz Dickie	DSP-2	00439427	20Jun07	CE101
Charge Amplifier	Unholtz Dickie	D33M	1331	11Apr07	CE090
Accelerometer	Unholtz Dickie	10B10T	5624	7Apr07	CE046

5.0 TEST DESCRIPTIONS

5.1 CIRCUITRY TEST

5.1.1 Objectives and Description

The purpose of this test is to ensure the system has been manufactured in accordance to the production drawings. This test will confirm that the PCB has been solder and wired and the proper voltage signal will occur when subjected to a crash pulse. The voltage output and open circuits are verified by connecting a multi-meter to the applicable pins in the connector per production drawing 508358.

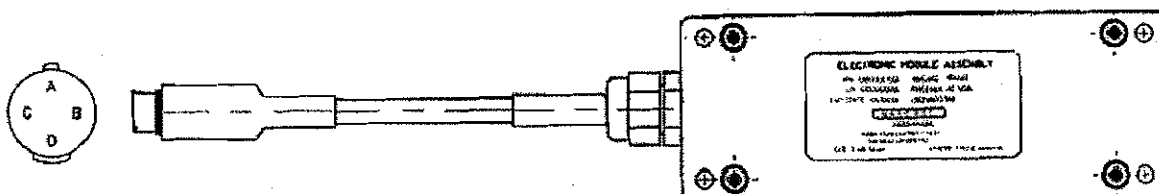


Figure 1 – Electronics Module Assembly (EMA) Pin-Out Diagram

5.1.2 Test 5.1 Conclusions

Analysis of the test unit showed no anomalies and the proper voltage and open circuits were obtained across the designated pins. Voltages and open circuits are recorded on AmSafe Form I-157. See Appendix A

5.2 MODULE TRIGGER TIME TEST

5.2.1 Objectives and Description

The purpose of this test is to ensure the system has been manufactured in accordance to the production drawings and will send a signal to the system when subjected to a crash pulse. The proper firing time is verified by connecting the unit to an electro-dynamic thruster which can produce a crash pulse as specified per the production drawing 508358 and Sensor Specification E508645. The data is captured through the control system and is displayed graphically and numerically to the user. The user can obtain the firing time by subtracting the difference between the thruster zero time and the unit trigger time. This data is entered into a protected spread sheet for acceptance of the unit.

5.2.2 Test 5.2 Conclusions

Analysis of the test unit showed no anomalies and functioned as designed. The proper trigger time was obtained per the production drawings by subtracting the trigger time from the thruster zero time. The proper voltage of 7.0 VDC or greater was obtained. See Figures 2 & 3. Results of the trigger time are recorded on AmSafe Form I-151. See Appendix B.

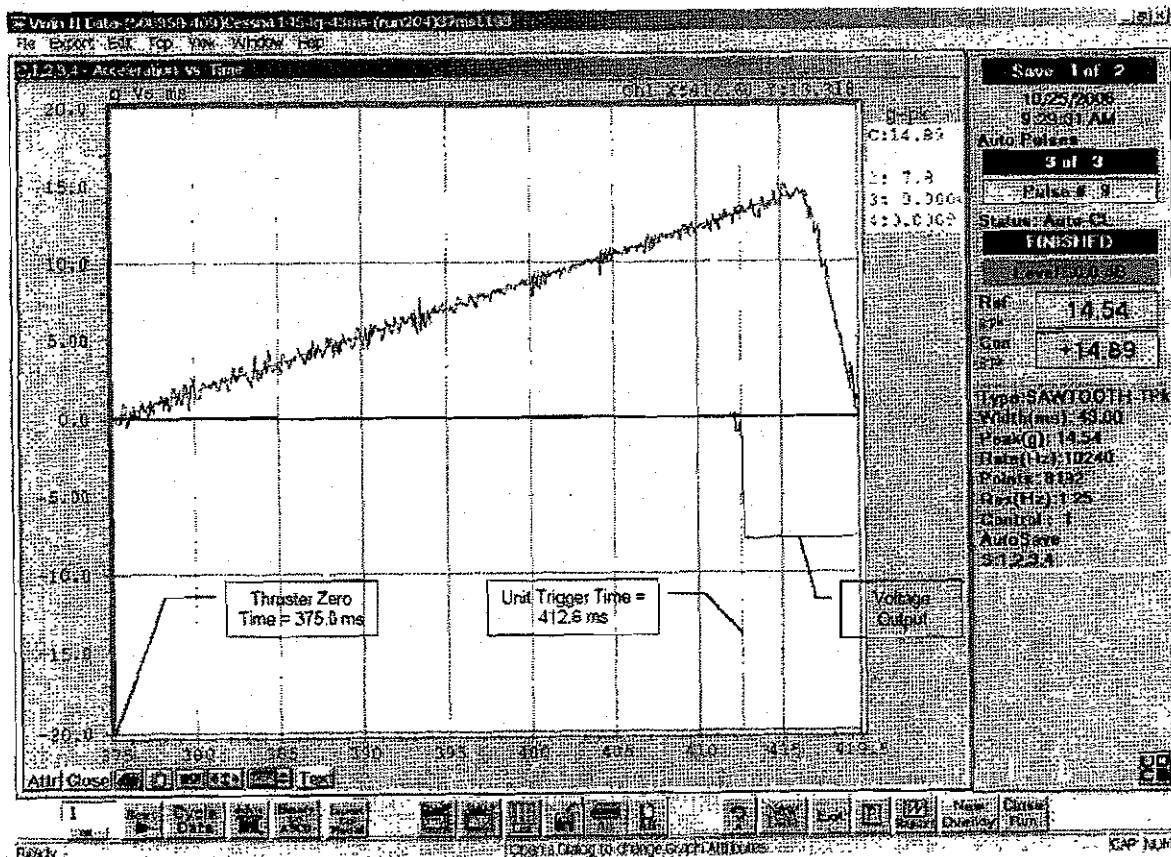


Figure 2 – 14.54g/43ms Sawtooth Shock Pulse

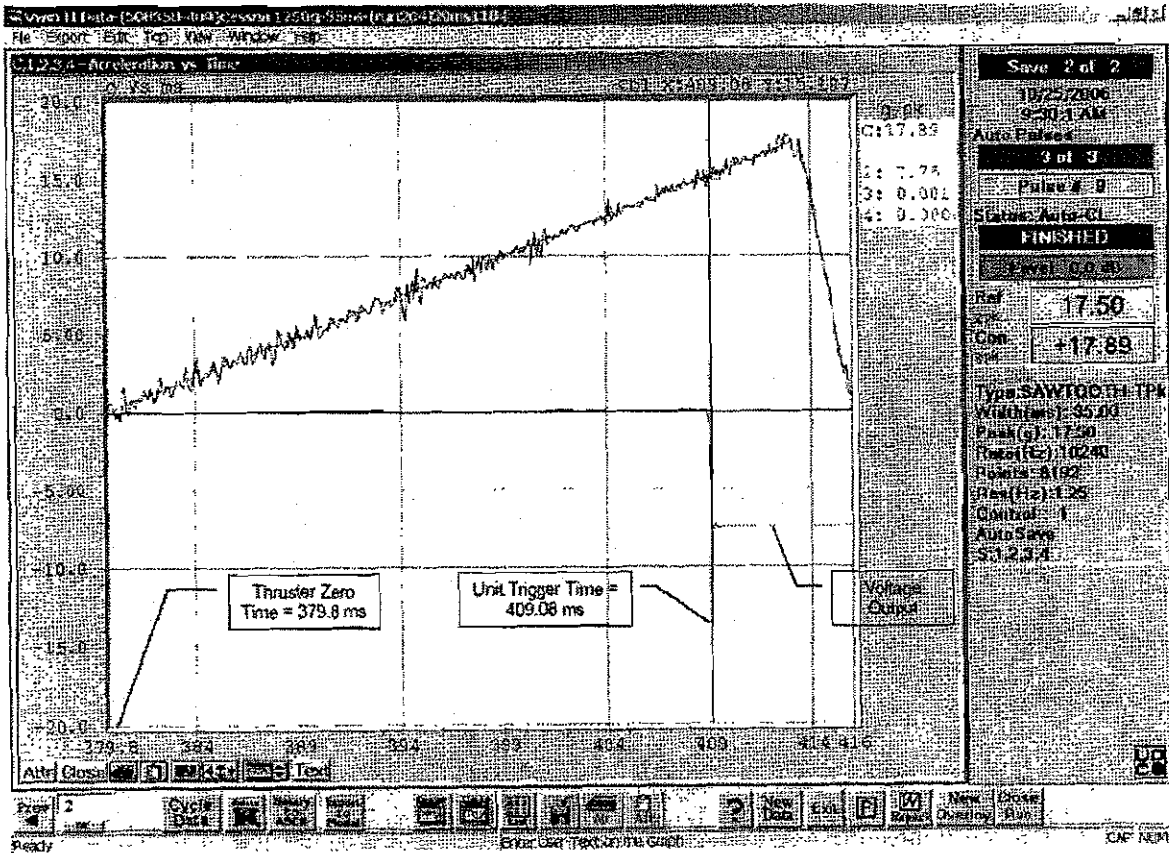


Figure 3 – 17.50g/35ms Sawtooth Shock Pulse

APPENDIX A - TEST 5.1, AMSAFE EMA/SENSOR LOG SHEET (FORM I-157)

EMA/Sensor Serial Number Log Sheet					
EMA P/N	EMA S/N	Work Order	Date	Quantity	Tech Initial
500358-009	17 MAY 05	24C10071	10/25/04	1	B. Harned
Form I-157 Rev 07/06 Multi-meter I.D.:					
SN	EMA	SN#1	SN#2	SN#3	Voltage & Open Circuit Verified
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APPENDIX B – TEST 5.2, EMA ACTIVATION DATE THRUSTER TEST STAND (FORM I-151)

AMSAFE Aviation Inflatable Restraints

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